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# Perceptions of and reactions to hostility-eliciting sport situations

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PERCEPTIONS OF AND REACTIONS TO HOSTILITY-  
ELICITING SPORT SITUATIONS

by

Matthew Alan Steenberg

An Abstract

of a thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Science in the School  
of Health, Physical Education  
and Recreation at  
Ithaca College

September 1981

Thesis Advisor: Dr. A. Craig Fisher

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## ABSTRACT

Currently in personality research there seems to be increasing interest in the realm of situational analysis. Much of this research studied the physical and social characteristics of the situation and not the psychological significance or perceptions that an individual might have of that situation. If the psychological meaning or perception of a situation could be understood by the researcher, then the ability to predict behavior might be enhanced. Magnusson and Ekehammar (1975) declared that the knowledge of the situation's significance to an individual is a "necessary condition" for predicting and understanding behavior. The study probed athletes' perceptions of and reactions to hostile-eliciting sport situations in an attempt to gain insight into how athletes display certain behaviors in specific situations. Subjects ( $N = 50$ ) were members of either the Ithaca College football or lacrosse teams during the spring semester of 1978. Each athlete was administered two paper-and-pencil inventories: similarity of sport situations and inventory of attitudes towards sport situations. The sport situations were derived from an earlier study (Burton, 1977) for which 15 hostility situations were utilized. Principal components analysis was performed on these 15 situations resulting in the eight situations utilized in this study. These eight situations were then grouped according to a priori classification of two factors: Directed and Nondirected Hostility. Athletes' perceptions of the sport situations were obtained by asking the athletes to rate the degree of similarity of each pair of situations. Mean similarity estimates among situations across subjects were computed and treated with principal components analysis. Reactions were obtained from the identical eight hostility-eliciting situations utilized in the similarity inventory. The "Attitudes towards sport

situations" consisted of the presentation of each situation accompanied by 11 reaction scales, e.g., "want to hit something or someone" and "feel irritated." Athletes were instructed to indicate the degree to which they would show each of the hostile reactions to each situation. Data were collapsed across reaction scales for each situation for the purpose of creating a correlation matrix among the situations. The same principal components analysis utilized with the perception data was used. The results of both analyses yielded two factors which accounted for 69% of the total variance in the reaction data and 65% in the perception data. Several situations violated their expected a priori loadings. The major emphasis of this study was that behavioral reactions have degrees of congruence with situational perceptions. To test this thesis, the reaction factor matrix was orthogonally rotated to congruence with the perception factor matrix using Case II of Cliff's (1966) factor matching procedure. The overall goodness of fit was .46 with -1.0 being the worst and 1.0 as the best fit. The factor match revealed a coefficient of .45 on Factor 1 (Directed Hostility) and .22 on Factor 2 (Nondirected Hostility). A final analysis that was performed was a product-moment correlation procedure utilizing the similarity matrix versus the correlation matrix. This procedure was performed to ascertain the degree of congruence of single situations. For perceptions of and reactions to all situations, the correlation coefficients were moderate to low. The analyses supported the following findings: (a) hostile sport situations perceived as similar are not responded to in a similar way, (b) hostility reactions of some situations are more congruent with perceptions than others, and (c) there are "sport constraints" or "coach constraints" that will influence perceptions and reactions.

PERCEPTIONS OF AND REACTIONS TO HOSTILITY-  
ELICITING SPORT SITUATIONS

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A Thesis Presented to the Faculty of  
the School of Health, Physical  
Education, and Recreation  
Ithaca College

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In Partial Fulfillment of the  
Requirements of the Degree  
Master of Science

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by  
Matthew Alan Steenberg  
September 1981

Ithaca College  
School of Health, Physical Education and Recreation  
Ithaca, New York

CERTIFICATE OF APPROVAL

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MASTER OF SCIENCE THESIS

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This is to certify that the Master of Science Thesis of

Matthew Alan Steenberg

submitted in partial fulfillment of the requirements  
for the degree of Master of Science in the School of  
Health, Physical Education, and Recreation at Ithaca  
College has been approved.

Thesis Advisor: ✓

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Studies:

Date:

June 22, 1981

## ACKNOWLEDGMENTS

The investigator would like to extend the sincerest appreciation to the following people:

1. The football and lacrosse players and the coaches for their time and cooperation given to this study.
2. Dr. A. Craig Fisher, my thesis advisor, whose undying patience and guidance has made this investigation possible.
3. All my close friends for their constant external motivation.
4. Mr. and Mrs. Donald Steenberg, my parents, for providing me with the opportunity to extend my education beyond undergraduate school.

## DEDICATION

This thesis is dedicated to my wife, Lynn. Without her patience, love, and expert typing skills, I would have never completed this study.



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## Chapter 1

### INTRODUCTION

In recent years numerous studies and articles have been written regarding the phase of personality entitled interactionism. The premise of this position involves situation and person variables as codeterminants of behavior without specifying either as primary or subsidiary. Present research has been conducted investigating the systematic analysis of situations in the person x situation model of interactionism. Much of this research studied the physical and social characteristics of the situation and not the psychological significance or perceptions that an individual might have of that situation. If the psychological meaning or perception of a situation could be understood by the researcher, then the ability to predict behavior might be enhanced. Magnusson and Ekehammar (1975) declared that the knowledge of the situation's significance to an individual is a "necessary condition" for predicting and understanding behavior.

To better understand the interactionist position and to be able to interpret the person x situation model, psychologists have been searching for a more appropriate means of situational analysis. In past situational research only two researchers (Magnusson, 1971, 1974; Magnusson & Ekehammar, 1973, 1975) have called for a need for analyses that can systematically illustrate how persons judge and cognitively experience situations. One empirical method that is used to study a situation's significance is to investigate an individual's behavioral patterns across varying situations (Magnusson, 1971). This method involves the study of an individual's responses to a set of situations and the individual's perception of the same situations. By studying the individual's responses on both of these

models, it is possible to structure a relationship as to what meaning or significance the individual gives to the situation. If this meaning can be interpreted by the researcher, then this "necessary condition" for predicting and understanding behavior might be determined.

In sport many situations arise that require a perceptual process to take place in order for the athlete to behave appropriately. If coaches or psychologists were knowledgeable in the area of perception of situations and understood why or how a certain athlete might perceive specific situations, then one's understanding of behavior might be increased.

It seems valuable to extend Magnusson's and Ekehammar's psychological research in the area of perceptions of and reactions to general life situations to athletic situations in sport. As mentioned in the previous paragraph, if the coach or team psychologist had an understanding of the players' interpretations of specific athletic situations, then the coach would better understand the cognitive thoughts of the team. From this understanding possibly the coach would know why and how to utilize certain athletes in specific situations.

One such understanding that would enhance a coach's ability to direct the team would be the understanding of a potentially hostile evoking situation. Every athlete views a hostile evoking situation differently. Some individuals may perceive a situation as being overtly aggressive or violent. Other athletes may perceive the same situation as being "part of the game." If a coach could possibly know how each individual participant on the team perceived certain hostile situations, then the ability to substitute or play those individuals who would ultimately perform in those situations would be enhanced.

This investigation involves the utilization of eight hostile situations in athletics. Athletes from two sports indicated their reactions to these situations and then their perceptions of how similar the same situations were to one another. Data from the similarity or situational meaning model are considered in the perception treatment. Magnusson and Ekehammar (1975) stated that the reactions made by an individual in a specific situation are dependent upon the perception of that same situation. Therefore, what an individual perceives about a situation should predict the behavior exhibited in that situation. In the present study an attempt was made to search for a systematic relationship between athletes' perceptions of a set of hostile situations and their respective reactions to these situations.

#### Scope of Problem.

The eight hostile situations used in this investigation were chosen from Burton's (1977) research. Burton's final 15 hostile situations were subjected to a principal components analysis yielding two factors (see Appendix A). Those situations illustrating the highest factor loadings on each factor were chosen. Of the final eight situations the four situations appearing in Factor 1 were designated as Directed Hostility. The remaining four situations in Factor 2 were named Nondirected Hostility. The eight situations were placed randomly in each inventory according to a table of random numbers. The situations were then incorporated into a S-R (situation-response) inventory of attitudes towards sports situations accompanied by 11 response modes. Each of the 11 response modes were ratings that provided the subject a 5-step scale as to how much hostility a particular situation evoked. The scale consisted of ratings from "none" to "very much" corresponding with the numbers from 1 to 5. The situations related specifically



to situations encountered in both football and lacrosse.

The formation of the perceptual model involved the construction of a similarity of sport situations inventory. This inventory utilized the same situations that were present in the S-R inventory. However, while experiencing this inventory the subjects were instructed to rate the degree of perceived similarity for each pair of situations using a 5-point scale, ranging from "A . . . not at all similar" to "E . . . identical." All situations were paired with one another. The entire testing instrument was administered to male intercollegiate varsity and junior varsity football and lacrosse athletes ( $N = 50$ ) attending Ithaca College during the spring semester of 1978.

Both inventory ratings were collected within a 2-hour time frame. Either the similarity inventory or the attitudes inventory was presented first. Upon completion of the initial inventory each subject was given a 30-minute rest period. During this time each subject was free to leave the testing area. All subjects were tested in a classroom while seated at desks with the examiner present at all times.

The reaction data were subjected to a Pearson product-moment analysis in order to compute correlation coefficients for the situations across subjects. The intercorrelation matrix was then treated with principal components analysis. Factors with eigenvalues greater than unity were orthogonally rotated to simple structure according to the varimax procedure.

The analysis utilized for the perception data involved the computation of mean similarity estimates among situations across subjects. This process was a multidimensional scaling methodology proposed by Magnusson (1971). After transformation the similarity estimates ranged from 0 to 1 and were

regarded as correlation coefficients. Perception data were then treated with principal components analysis.

Two final statistical analyses which were employed were Cliff's (1966) least-squares solution for rotating a factor matrix orthogonally to a specified target matrix, and single situation perception-reaction congruence analysis. Each analysis provided an estimate of the degree of similarity of perceptions of and reactions to the sport situations.

#### Statement of Problem

The perceptions and reactions of football and lacrosse athletes to hostility-eliciting situations were investigated. The data gathered were used to formulate answers to the following important questions:

1. Will there be a relationship between situation perception data and situation reaction data?
2. Will there be a relationship between single situations of situation perception data and situation reaction data?

#### Hypotheses

1. There will be a positive relationship between situation perception data and situation reaction data gathered from football and lacrosse athletes.
2. There will be a positive relationship between single situations of situation perception data and situation reaction data.

#### Assumptions of Study

This investigation was based on the following assumptions:

1. The situations utilized related specifically to situations encountered in football and lacrosse.
2. The subjects were representative of the population of football

and lacrosse players at Ithaca College.

3. All subjects were considered to be athletes.

4. The athletes related to the investigator an accurate estimate of the emotions elicited in them by the presented situations through past experiences or player experiences.

5. The athletes' responses were in no way directed by social desirability.

#### Definition of Terms

In order to clarify the understanding of this investigation the following definitions have been formulated:

1. Perception: the psychological significance of some observed behavior to an observer.

2. Reaction: a physiological or psychological response to an observed behavior.

3. Athlete: an individual who has actively participated in a sport for 5 years or more.

4. Hostile behavior: a behavior involving physical or psychological abuse of another individual.

5. Directed Hostility: hostility directed personally or physically at another.

6. Nondirected Hostility: hostility directed not personally or physically at one individual but at an entire group or situation.

7. S-R inventory: a situation-response inventory that involves the samplings of reactions to situations on a 5-point scale ranging from "not at all" (1) to "very much" (5).

8. Inventory of attitudes towards sport situations: a questionnaire asking a subject to declare a reaction response to each of 11 response modes accompanying each of eight situations (same as the S-R inventory).

9. Similarity of sport situations: an inventory asking a subject to declare a degree of similarity for each pair of 28 paired situations. The degree of similarity is measured on a 5-step scale from "not at all similar" (A) to "identical" (E).

10. Varsity football and lacrosse players: individuals who participated on the varsity football team and varsity lacrosse team at Ithaca College.

11. Junior varsity football and lacrosse players: individuals who participated on the junior varsity football and lacrosse teams at Ithaca College.

#### Delimitations of Study

The study had the following delimitations:

1. The subjects had at least 5 years of playing experience in football or lacrosse.
2. The study involved male college age varsity and junior varsity athletes involved in either football or lacrosse.
3. It was realized that some players had more experience than others due to athletic ability.
4. One method of data collection was used, viz., self-report measures.

#### Limitations of Study

The limitations of the study were as follows:

1. Due to specific individual differences, the results of the study may not be applied to other football and lacrosse teams.
2. Other scales or inventories examining perceptions of and reactions

to hostile situations may have resulted in different findings.

## Chapter 2

### REVIEW OF RELATED LITERATURE

For the design of this investigation, the review of related literature had its emphasis in the following four areas: (a) review of interactionism, (b) theories of perception, (c) person-situation analysis, and (d) summary. The theories of perception section was subdivided into a section involving the discussions of perception in regards to an organizational or categorizational process. The final subdivision involved experience and learning related to perception.

#### Review of Interactionism

The theory of personality that utilizes the person-situation analysis is the interactionist position. The interactional paradigm involves situation and person variables as codeterminants of behavior without specifying either as primary or subsidiary. This position accounts for human behavior in terms of both the person and the situation in which the behavior is exhibited. Ekehammar (1974) supports this theory by stating:

Interactionism can be regarded as the synthesis of personologism and situationism, which implies that neither the person per se, nor the situation per se is emphasized, but the interaction of these two

factors is regarded as the main source of behavioral variation: (p. 1026)

Many researchers such as Bowers (1973), Ekehammar (1974), Endler (1973), Endler and Magnusson (1976a), Fisher (1977), and Sells (1963) support Ekehammar's statement of interactionism and strongly agree that the person x situation interaction is a primary factor in determining behavior.

The precise conception of the person x situation model was summarized by Endler and Magnusson (1976b), and involved four points of behavior:

1. Actual behavior is determined by a continuous process of interactions between the individual and the situation encountered.

2. The individual is an intentional active agent of the interaction process.

3. On the person side of the interaction, cognitive and motivational factors are essential determinants of the behavior.

4. On the situation side, the psychological meaning of the situation for the individual is the important determining factor. (p. 968)

The final two points made by Endler and Magnusson regarding interactionism have a direct relationship to person-situation analysis. On the person side, the cognitive functions of the individual's brain are most important in determining the person's behavior. On the situation side of the analysis, the psychological meaning (perception) of the situation also is a strong determining factor in the behavior exhibited by an individual. Therefore, the cognitions that an individual experiences regarding a situation in which he or she is involved shapes the behavior to be displayed.

Regarding the topic of behavioral consistency, it has been stated that neither traditional methods of data collection, which fail to take into account situational variation but ask for generalized reactions across situations, nor the models and methods of data treatment that are characteristic of the trait measurement model, are appropriate in all situations (Endler & Magnusson, 1976). It is suggested (Burton, 1977) that the need to look for stability across situations is unnecessary and that methods to seek out specific ways in which individuals adjust their behavior to meet situational demands is desired. Fisher (1977) suggested a method for looking for ways in which individuals adjust their behavior by studying the

individual's reaction to classes of situations that have personal meaning to the individual. Fisher substantiated further this viewpoint by stating, "The reason for this strategy being important is that one of the basic assumptions of interactionism is that individual behavior is more similar across situations that are perceived and interpreted as similar by the individual" (p. 2).

Relating the interactionist person x situation paradigm to sport personality seems to be an acceptable approach to be utilized in sport psychology research. Martens (1975) supported this viewpoint by stating that "it should be obvious by now: The interactional paradigm is the direction that sport personality research, indeed all personality research, should take" (p. 430).

### Theories of Perception

Perception, like many other areas of psychology, has many definitions and subareas to be understood. Allport (1955) explained perception as an awareness, a meaning, or recognition of objects or conditions around us. He also added that perception was dependent upon an impression drawn from the stimulus by the perceiver. Cappon (1971) defined perception as, "a process, a set of intervening variables between observable stimuli, sensation, and patterns of behaviors" (p. 11). An important statement later made by Cappon declared perception as one of the key mental processes determining behavior. Bowers (1973) supported Cappon's statement about perception as the key process determining behavior by adding that the psychological implications of the interaction of the person and the situation imply that the major determinant of behavior is the individual's perception (construction) of the situation and not the environment per se.



Mischel (1969) presented an interesting explanation of perception by discussing sense experiences and conceptual thinking which apply to situational perception, and influence memory, imagination, and emotion. Adhering to his definitions, Mischel stated that the perceptual process includes steps of initial preliminary appraisal of the object or situation, recall, imagination of action, and possible consequences and appraisal for action. Mischel suggests that the individual experiences these steps each time a person perceives and then reacts. In a later discussion Mischel (1973) related perception to a social learning process which encompasses all of his previous remarks from 1969. Mischel stated that "through direct and observational learning through the course of cognitive development, the perceiver acquires the potential to generate vast repertoires of organized behavior" (p. 265). Therefore, through learning and experiencing situations, the individual learns how to interpret and conceptualize situations and then select a behavior appropriate for that situation. Forgas (1976) regarded perception in the same vein as Mischel declaring perception to be a superset of learning, memory, and thinking. He refers to perception as the process by which an organism receives or extracts certain information from the environment. This information has cue values triggering some kind of reactive or adaptive action from the individual. Endler and Magnusson (1976b) also referred to situational information as eliciting cue values by discussing the individual's behavior in regards to how the behavior is influenced by significant features of the situation (cues). Endler and Magnusson discuss the fact that these significant features (cues) of a situation provide a frame of reference for the individual to choose from and interpret, thus evoking a behavior for that interpretation.

Berkowitz (1977) does not directly discuss perception but he does mention the importance of cues and the meanings placed upon them by the individual in determining a behavior.

Perception is obviously associated with some type of mental process that takes place in the brain. The word perception is related to an awareness, a meaning, or recognition of objects or conditions around us; a process or set of intervening variables between observable stimuli, sensation, and patterns of behavior; a sense experience involving conceptual thinking; and a superset of learning, memory, and thinking. How do these theories and definitions apply to the athlete in a sport situation? Certainly in an athletic contest athletes must be aware of the objects and conditions surrounding them and be able to recognize their characteristics. Through learning and experience athletes formulated specific meanings for these objects and conditions and therefore apply a conceptual thought process to create a physical or emotional response. If athletes can learn from their perceptions and store this learning in memory, then in situations that occur following the learned situations, they may have a baseline of experience or memory from which to draw a behavior.

#### Experience and Learning in Relation to Perception

Earlier in this chapter, it was mentioned that perception interprets informational cue values that trigger a reactive or adaptive action by the individual (Forgus, 1976). What do these cues contain to elicit a response to a certain condition? Possibly, these cues contain aspects of the individual's experiences and memory. Koffka (1935) stated that perception depends upon experiences that are produced. Essentially, Koffka was inferring that

experiences create a perceptual field within an individual. Mischel (1969) also discusses perception in relation to past experiences, but adds that these experiences locate traces in the brain that are aroused and thus create a response. He explained this position as follows:

Influences of past experiences upon perception, while experiencing incoming sense data, locate corresponding traces of past experiences in like situations, arouse them, and interact with them to produce the percept conceived as a joint product of the present stimulus and arousal trace. (p. 321)

Therefore, according to Mischel, the endproduct of perception has two components--the stimulus situation and the arousal trace. Schachter and Singer (1962) somewhat paralleled Mischel's discussion by declaring that two variables, cognitive expectancy and physiological arousal, interact to produce a particular emotional effect or perceptual response. In Schachter's and Singer's discussion, the cognitive expectancy could have been created by the stimulus situation and the physiological arousal may be generated by the individual's past experience trace in the brain.

Vernon (1962) also discussed perception in terms of experience by stating that what people perceive in any given situation may vary according to their previous experiences. Vernon implies in his statement that the individual may only perceive those stimuli that have been experienced previously in a situation. If this assumption is accurate, then much of what an individual observes, unless previously experienced, will not have any meaning and will not affect behavior. Powers (1973) mentioned that perception contains a reference condition (past experience) and a goal condition (the response to a stimulus). The reference condition is a

perception of the goal condition of a situation.. The individual behaves exactly as if to compare the perceived state of affairs with a reference perception of how that perception should look. Powers added that these conditions are two perceptions in the individual's brain but only one component corresponds to the present time environment. In easier terms to understand, Powers was claiming that the individual is placed in a situation, perceives what is happening by referring back to past experiences (reference condition), and then by again searching reference conditions the person creates a response that is best fitting to the situation. Hunt (1965) also discussed perception or thought processes as showing that "experience, defined as the organism's encounters with the environment, is continually building into the developing organism a hierarchy of operations for processing information and for coping with new circumstances encountered" (p. 699). Hunt, as did Powers, was also referring to perception as a process of utilizing a reference condition in the brain that had been created through experience.

Magnusson and Endler (1977) also discussed the perceptual process as a resurrection of stored information gained through experience but added further the concept of mediating variables. A basic element of the person-situation process of interaction is the mediating process. This mediating process is made up of cues which are selected from a situation, interpreted, and treated in a frame of reference provided by the individual's stored information (past experience and knowledge).

The entire mediating process is composed of three kinds of variables. The first variable discussed by Magnusson and Endler is termed structural mediating variable. These variables such as physical ability, competence, and intelligence have an impact on how information is transformed into behavior (Magnusson &

Endler, 1977). Secondly, the mediating process includes content variables. In every situation two different kinds of content variables are available, situational information and stored information (knowledge and past experiences). Stored information affects the selection of situational information by influencing the choice of situations the individual would like to appear in, and also by affecting the selection process of cues from a specific situation. Stored information (knowledge and past experiences) is also influenced in the interpretation of situational information that is selected. Therefore, stored information acts as a framework of reference for the individual's interpretation of situational information, and situational information is then given meaning when combined with stored information. In essence, Magnusson is proposing that knowledge and past experiences which an individual has obtained directly influence what cues will be interpreted in a certain situation.

The third variable discussed by Magnusson was motivational mediators. These variables include needs, motives, and traits of an individual indicating the interaction of content variables and structural variables to satisfy motivational variables.

An interesting discussion by Bandura, Grusec, and Menlove (1966) also mentioned mediators and their role in perceptual processes. These mediators refer to how the brain codes the information received from the model or stimulus. Perceptual mediation refers to the imagined representation system. Perceptual mediators are similar to video recorders only a video recorder is not a brain. However, both serve the same function. An example as to how these mediators function is to take a modelling stimulus. It is coded into images or words for memory representation, then this coded stimulus functions as a

mediator for subsequent response retrieval and reproduction. Again the concept of experience situations is expressed. Do Bandura et al. (1966) imply that people actually create past experienced pictures in their brains each time they are placed in a situation? If in fact this does happen, then athletes, when confronted with a situation during competition, actually see the situation in their brain and how they behaved previously, therefore affecting their behavior at the present time.

Crow and Hammond (1957) discussed the perception of situations or objects by the amount of knowledge the individual "brings to the situation." They stated that "as knowledge has accumulated about the judgments that subjects make of others on the basis of brief observation, it has become apparent that what the subject 'brings to the situation' determines to a marked degree his response to the task" (p. 385). In essence, Crow and Hammond were saying that an individual may preplan behavior based on experience and previous judgments, and then utilize these plans in behavior in a situation.

### Organization and Categorization

In recent years psychologists have taken perception and referred to it as an organizational or categorizational process of information in the brain. Hastorf, Schneider, and Polefka (1970) referred to perception as a process of information extraction from the world and then forcing this information into a set of categories. If this process is specifically related to one situation, then the individual extracts stimuli from the situation, takes the stimuli and puts them into a category, or categorizes them in the brain to be further analyzed. Hastorf et al. extended this concept by declaring that perceptions are both structural and organized.

Structural perceptions are the outcomes of the individual engaging in active processing of information. This processing procedure includes the translation of physical impingements to nerve impulses. The next step is to actively select and categorize the inputs. This last step is the organizational procedure which is later expressed in behavior. Hastorf et al. summarized their thoughts on perception by referring to the perceiver as an individual who combines various types of stimuli information to produce an impression. The emphasis is placed by the perceiver on the stimuli and their organization. According to Hastorf et al., perception is purely an extraction of stimulus information followed by an organization of these stimuli in the brain.

Cappon (1971) referred to a differentiation of messages in the brain taken from the environment. Cappon supported the discussion of Hastorf et al. by dealing with the perception as an orientation of stimuli. The function of perception is to decode messages originating both in the environment and within the person. According to Cappon, perception is an orientation process closely related to the organization theory of Hastorf et al. in that both discussions deal with the extraction of information and the organization (orientation) of this information in the brain.

Mischel (1973) refers to perception as an informational process that involves the encoding and grouping of information from stimulus inputs. Mischel supports the concept of coding stimulus inputs and then retrieving the coded information for behavioral reproduction.

Cappon (1971), Hastorf et al. (1970), and Mischel (1973) all have different expressions of how they understand perception, but the general premise that perception involves organization, categorization, and encoding

in the brain seems to be a common view of all authors.

### Person-situation Analysis

As early as 1935 Lewin advocated the study of situations along the psychological characteristics rather than the physical qualities that the situations pose for an individual. Was Lewin implying that the psychological characteristics of a situation are more important than physical qualities in determining behavior? Murray (1938) stated:

Since the conception of the perceptual world as a sign of sensory elements must be given up, perception presents us rather with actual things and events which have definite meaning. The stimulus (situation) to perception must be assessed not according to its physical intensity but according to its psychological reality. (p. 47)

In recent years researchers have begun to stress the need for studies involving the systematic analysis of situations and the meanings these situations have to individuals. Magnusson (1971) clearly indicated support for this type of research by discussing psychological research in terms of being exclusively studied in one area of the interaction system. This research area involved the study of the individual with the analysis of situations being almost nonexistent in the literature. Sells (1963) spoke to the issue of the lack of situational dimension research by stating, "While work proceeds actively to extend the exploration of individual differences, however, the equally important frontier of situational dimensions is virtually ignored" (p. 700). Many other researchers (Endler & Magnusson, 1976a; Fisher, 1977; Magnusson, 1974; Magnusson & Ekehammar, 1975; Schalling, 1971) have supported the premise that there is a need for methods to study the dimensions of situations and how these situations are related to by



individuals.

Situations are stimulants of the perceptual process. In order to understand the perceptual process of individuals, the situation must be first investigated. During the early years of personality research, Kantor (1924), Koffka (1935), and Murray (1938) described a situation as consisting of two components. The first was by describing the physical environment, referring to the "objective" world outside the organism which can be identified in terms of physical and social variables. The second way involves the psychological environment which refers to the "subjective" world, which means the individual's perceptions and construction of the physical environment described in terms of psychological variables. Murray (1938) viewed the stimulus situation as a "press" which is regarded as a tendency or potency in the environment to elicit certain behaviors. The endurance of a particular type of press in conjunction with a certain need determines the length of a single behavior. Murray elaborated further on the press theory by declaring that there are two types of presses, a type I, alpha press, and a type II, beta press. Both alpha and beta presses are apparent in behavior. However, the beta press is an individual's own interpretation of phenomena that are perceived. Murray continued the discussion on this theory by stating that the beta press is the main determinant of behavior. If an individual believes that a situation signifies a specific thing, then it will be this conception that operates the behavior. Murray was speaking directly to the concept of the psychological meaning (significance) an individual gives to a situation. Ekehammar (1974) recognized the importance of psychological meanings as did Murray. However, he discussed the perception of a situation as a construction process. Magnusson and Ekehammar (1975) also supported this

by emphasizing that it is the meaning or significance that the individual gives to the situation that is of importance for exhibiting the appropriate behavior. Therefore, the individual's reaction or behavior in a situation is a direct result of the person's perception of that situation. Fisher (1977) briefly mentioned support for the concept of perception being an important determinant of behavior by discussing a person's behavioral acts as being outgrowths of an individual's perception of a situation.

In the literature there seems to be an interest towards the analysis of situations using perception as a tool. Magnusson (1971) conducted studies involving an individual's perception of situations. Magnusson constructed these studies upon the premise of cognitive similarity and to use situations as a whole as stimuli when studying the dimensionality of an individual's judgments of situations. Referring back to cognitive similarity, the more psychologically similar situations are to one another, the nearer they are assumed to be to each other in the cognitive organization of an individual. If this cognitive organization can in some way be understood by a researcher, then possible behavior could be predicted.

Magnusson formulated 36 academic situations that represented a definite domain of academics. Only three subjects were utilized in the investigation. These subjects rated the **perceived** similarity between situations involving positive and rewarding characters of academics; negative aspects of academics; passiveness, and social interaction. Magnusson (1971) found that:

(a) The judgments of perceived similarity between situations have a considerable degree of consistency over time.

(b) The dimensionality of these judgments show great agreement among individuals in a homogeneous group.

(c) Dimensional analysis both of average and individual similarity judgment matrices provides a clear and psychologically interpretable structure. (p. 864)

Most importantly Magnusson's conclusions suggested that the methodology utilized can be used to study the structure of individual and group perception of situations and to express this structure in psychologically pertinent dimensions. Finally, Magnusson stated that by the use of the study's methods it should be possible to relate changes in individual behavior from situation to situation to information regarding how a person perceives these situations. Magnusson is suggesting that the mentioned techniques might enable the researcher to predict behavior.

Following Magnusson's 1971 research, a 1973 followup investigation was done with Ekehammar to confirm the main results obtained in the earlier study. In this study 12 subjects were asked to judge the perceived similarity between the same 36 academic situations. The results obtained supported the use of the similarity estimation method to obtain quantitative measures of perception of situations for single subjects and groups. In 1974 Magnusson conducted another investigation that substantiated the findings from the earlier studies.

Finally, in 1975 Magnusson and Ekehammar investigated two approaches to the study of the psychological significance of situations. One approach used data obtained from individual's perceptions of situations. The remaining method used data taken from the individual's reactions to the same situations. The method used involved 12 situations which were selected so as to encompass four types of stressful situations. The four types of stressful situations included threat of punishment, threat of pain,

innominate threat, and ego threat. The same situations were utilized in the reaction approach and the perception approach. The reaction model asked 40 subjects to respond to a S-R inventory comprised of 12 situations and 10 reaction scales. Each situation had 10 response modes. All situations were verbally explained to the subjects. The response scale consisted of a 5-point scale ranging from "not at all" to "very much."

The perception approach utilized the same 12 stressful situations. However, in this model the situations were randomly paired together and the 40 subjects were asked to rate the degree of perceived similarity for each pair. The rating scale consisted of a numerical 5-point scale ranging from "not at all" to "completely similar."

The expectations of the investigation by Magnusson and Ekehammar were that the situations should be distributed on factors in the same way for situation reaction data as for situation perception data. For the initial three factors congruence was good. However, the final factor, ego threat, did not yield the same results. The situations for this factor were distributed on different factors. The situations involved the demand of achievement from the individual of which sport was an example. The results indicated a clear situation factor for perception data. A factor for reaction data was not obtained. Possibly, Magnusson and Ekehammar explained, individuals perceive achievement situations similarly but react either aggressively or actively, or with avoidance and withdrawal. Those individuals that react actively and aggressively perceive the situations as demanding and challenging. To others the same situations might be perceived as anxiety provoking, thus these individuals react with avoidance and withdrawal. The main conclusion that Magnusson and Ekehammar (1975) made from

their research was that there was no necessary general systematic relationship between situation perception data and situation reaction data which was valid across individuals and across situations of different character.

The entire spectrum of Magnusson's and Ekehammar's work suggests some interesting research into the area of sport. If the psychological significance of a situation in fact dictates an individual's behavioral reaction to that situation, then the knowledge of the significance that each athlete gives to a situation would be a valuable tool for coaches. The coach would be able to better understand the behavior of each athlete in certain specific situations.

### Summary

The status of personality research seems to be one of confusion. Some researchers accept the trait model, some the situational model, and still others support the interactionist position. The interactionist position seems to be the most logical theory to advocate for personality investigation. The interactional paradigm involves situation and person variables as codeterminants of behavior without specifying either as primary or subsidiary. Many researchers (Bowers, 1973; Ekehammar, 1974; Endler, 1973; Fisher, 1977; Magnusson, 1974; Magnusson & Ekehammar, 1975; Sells, 1963) support the premise of interactionism and agree that the person x situation paradigm is a primary factor in determining behavior.

According to the research, perception has many definitions. Allport (1955) explained perception as an awareness, a meaning, or recognition of objects or conditions around us. Cappon (1971) discussed perception as a process or set of intervening variables between observable stimuli, sensation, and patterns of behavior. Bowers (1973) and Mischel (1969, 1973)

had another way of discussing perception by declaring that perception involved sense experiences, conceptual thinking, influence, memory, imagination, and emotion that all can be attained through direct and observable learning. Berkowitz (1977), Endler and Magnusson (1976b), and Förgus (1976) regarded perception as a superset of learning, memory, and thinking accompanied by cue values that are elicited by the situation and which directly affect a behavioral response. Obvious to the researcher is the fact that all the definitions of perception presented in this review suggest that a cognitive process does take place when perceiving.

Experience and learning have been discussed as playing an important role in the perception of situations. Also mentioned is how experience and learning not only affect the perceptual process but also intervene as an important determinant of behavior. This experience and learning concept also affects how a person might perceive a situation. Also in the area of experience, mediating variables have been discussed regarding their influence in interpreting situations according to specific cues. Possibly, the individual will only perceive those aspects or cues of a situation that are associated with past learning or experience. However, the more experienced an individual is in a specific area, the more efficient the person will be in perceiving a situation and, in turn, will react more efficiently to the cues of the situation.

Perception has also been regarded as a process of organization and categorizing of information within a person's brain. The individual is placed in a situation, perceives the stimulus, and then organizes this stimuli into categories for future reference or recall. Certainly, in order for a person to be able to perceive and categorize, a situation must

be present.

The final subsection of this review involved the discussion of person-situation analysis. The study of situations and their psychological characteristics has been advocated for many years by many researchers. Lewin (1935), Magnusson (1971), Murray (1938), and Sells (1963) are but a few. The need for the dimensional analysis of situations and how these situations are related to by individuals was also stressed. Kantor (1924), Koffka (1935), and Murray (1938) discussed a situation as having two properties, an "objective" aspect and a "subjective" aspect. It is the subjective world of the individual's perceptions and constructions of the situation that is of primary importance. Murray (1938) referred to a situation as being a "press."

Regarding perception and psychological meaning that a situation might have to an individual, Ekehammar (1974), Fisher (1977), and Magnusson and Ekehammar (1975) supported the premise that it is the meaning or significance which the individual gives to the situation that is the major determinant of behavior. Magnusson (1971, 1974) and Magnusson and Ekehammar (1973, 1975) researched the area of situational dimensions by using perception. Subjects had to perceive or judge how similar certain paired situations were to one another. The investigation exposed an empirical method that would enable the researcher to better understand the dimensionality of situations as viewed by individuals.

All of the research reviewed could have a definite impact on sport research. If sport psychologists or coaches could understand the cognitions of athletes in certain situations, then possibly the behaviors of these athletes could be predicted.

## Chapter 3

### METHODS AND PROCEDURES

This chapter outlines the design and methodology employed in this investigation. More specifically, this chapter deals with: (a) selection of subjects, (b) testing instruments, (c) methods of data collection, (d) scoring of data, (e) treatment of data, and (f) summary.

#### Selection of Subjects

The subjects involved in this investigation ( $N = 50$ ) were members of either the Ithaca College football or lacrosse teams during the spring semester of 1978. These two athletic teams were chosen due to their availability. The subjects were all male varsity and junior varsity athletes ranging in age from 18 to 22 years.

Subjects for the investigation consented voluntarily to take part in the study. Each subject was required to sign an informed consent form (see Appendix B) prior to taking the inventories. Both head coaches of each sport granted permission to the investigator enabling the testing of the players to proceed. All subjects had to have had at least 5 years playing experience in either football or lacrosse to be eligible for the investigation.

#### Testing Instruments

The reaction inventory used in this investigation, the "Inventory of attitudes towards sports situations," was based on the construction of the S-R inventory by Burton (1977). As Burton explained, the situations were intuitively formulated with the aid of coaches and athletes. Burton's 15 situations were subjected to a principal components analysis yielding 2 factors (eigenvalues  $> 1$ ). Those situations illustrating the highest factor



loadings in each factor were chosen. Eight situations were selected from Burton's 15 making up the inventory utilized in this investigation.

The eight situations were comprised of four directed hostile situations and four nondirected hostile situations. The order in which the situations were presented was randomized. Each situation was accompanied by 11 response modes that were also taken from Burton's research. Each response consisted of a Likert scale that required the individual to indicate what type of personal feelings or physiological reactions are elicited by the situation. The ratings were declared in a 5-step scale from 1 (not at all) to 5 (very much). Each subject's rating depended on the person's individual frame of reference or perception of the situation (Burton, 1977).

The inventory was designed so that each situation was presented at the top of the page and enclosed in a box. All 11 response modes were listed directly below the situation (see Appendix C). On the preceding pages of the inventory explicit directions were present for the subject to review.

The perception approach or similarity of sport situations inventory was constructed directly from Magnusson and Ekehammar (1975). The inventory was comprised of 28 paired situations (Appendix D). The situations utilized in this approach were identical to the situations used in the reaction model. The subjects were instructed to rate the degree of similarity of each pair of situations. The rating scale was similar to the reaction response modes in that a 5-step Likert scale system was used ranging from A (not at all similar) to E (identical). The order of the presentation of the pairs of situations was randomized. The design of the inventory included five pairs of situations on each page totalling 28 pairs on six pages. This inventory also included explicit directions for the subjects to review

prior to beginning the inventory.

### Methods of Data Collection

The coaches of each team utilized in the investigation were contacted through personal interview. At each meeting the purposes of the investigation were outlined in order that the coaches would have a complete understanding as to what treatment the athletes were to experience. Permission was obtained from both football and lacrosse coaches and subject selection began. Meetings with both team groups were arranged to explain the purposes underlying the study and the requirements expected of each subject. Each athlete who agreed to become a participant met with the investigator and signed an informed consent form. At this meeting a schedule of times was presented to the subject for selection of a testing date and time. Three dates were presented with all testing beginning at 7:30 p.m.. Each subject selected a date and reported to the testing area at that time.

At each testing time half of the subjects were presented with the attitudes inventory (reaction) and the remaining half received the similarity inventory (perception). After the presentation of the inventories the subjects were given a pencil (#2) and a set of two computer answer cards each for the similarity inventory and the attitudes inventory. The subjects were asked to fill in their Ithaca College student identification number on the computer card. This procedure enabled the researcher to match the two inventory scores.

Following the presentation of the data collection inventories, the investigator read the instructions to the subjects and asked for further questions. The investigator stressed that all responses should be made by the individuals without outside influence. If questions were to be asked, they should be directed to the examiner. After completing the initial

inventory, the subjects were given a 30-minute break and were allowed to leave the testing area. Immediately following the break all subjects were presented with the remaining inventory. For each inventory the subjects had an unlimited time period to fill out their computer cards.

#### Scoring of Data

Each of the situations required 11 responses to be made by the subject. In the reaction approach or attitudes inventory, one response was chosen out of a set of five possible responses. The similarity inventory required one response according to the subject's perception of each pair of situations. The responses were made on markread computer cards. The data obtained on the computer cards were read by a computer creating a file for further analysis. The filed data were then used for further statistical analysis needed to provide information to test the hypotheses.

#### Treatment of Data

In the reaction approach the data were collapsed across reaction or response scales. A matrix of grand means was formulated having one collapsed mean for each subject across all responses for each individual situation (i.e., eight mean scores). To obtain a correlation matrix and a factor matrix, the mean scores were submitted to principal components analysis (BMD 72X). The analysis included the creation of a correlation matrix and orthogonal rotation of the created factor matrix to simple structure according to the varimax solution.

In order for a dimensional analysis to take place, each subject's similarity ratings (perception) were transformed into a scale ranging from 0 (no similarity at all) to 1 (identical) by dividing by four (Magnusson, 1971). Estimates of mean scores of similarity of situations by subjects

were formulated from the transmuted scale and a similarity matrix was created. The similarity matrix was treated as a correlation matrix and then subjected to the same principal components analysis utilized in the reaction approach.

The final phase of the treatment of the data involved the estimation of the degree of congruence among the situational factors produced by the perception and reaction data. This procedure was accomplished by designating the perception data as the target matrix and the reaction data as the rotated matrix, and then subjecting this information to an orthogonal rotation to congruence (Cliff, 1966). After rotation, coefficients of congruence were created.

Included in the final phase of the treatment of data was the perception-reaction congruence for each situation. This procedure involved the perception similarity matrix and the reaction correlation matrix in which row values of each matrix were correlated to establish indicators of the similarity of perceptions and reactions for each situation.

The consistency of the data was determined by test-retest coefficients derived from four subjects completing the two inventories approximately 5 weeks after the initial testing date.

#### Summary

The fundamental structure of this investigation was based on the study by Magnusson and Ekehammar in 1975. The intention was to construct a pair of inventories that involved perception of and reactions to athletic situations and use them to collect information from an athletic sample.

Members of the varsity and junior varsity football and lacrosse teams from Ithaca College served as subjects ( $N = 50$ ) in the investigation.

Statistical analyses of the data were exercised to acquire information regarding the testing of the hypotheses. Principal components analysis (BMD 72X) was used to create correlation matrices and factor matrices from perception and reaction data. The perception data were transformed in order to prepare the data for further computation. Finally, a congruence analysis was utilized to compare the agreement between the two sets of data. In order to illustrate consistency of the data a retest with selected subjects was administered 5 weeks after the initial testing date.

## Chapter 4

### ANALYSIS OF DATA

The results of this study are presented in this chapter. The specific areas of this investigation are as follows: (a) analysis of eight hostile evoking situations, (b) reaction correlation coefficients and mean similarity estimates among situations, (c) magnitude of hostility responses, (d) reaction and perception matrices, (e) analysis of the rotation of hostility reaction matrix to the hostility perception matrix, (f) perception-reaction congruence of single situations, and (g) summary.

#### Analysis of Eight Hostile Evoking Situations

The eight hostile situations utilized in this investigation were derived from Burton's (1977) original 15 situations. These 15 situations were subjected to a principal components analysis and yielded two factors. Those situations yielding the highest loadings on each factor were chosen for the current study. Factor 1 was designated as Directed Hostility and Factor 2 was termed Nondirected Hostility. The results of this analysis are presented in Table 1. Factor loadings on Factor 1 were as high as .86 for Situation 1 and as low as .70 for Situation 6. The highest loading for Factor 2 was .81 for Situation 14 and the lowest loading of .68 for Situation 12. The final eight situations of Burton's 15 are presented in Table 2.

#### Correlation Coefficients and Mean Similarity

##### Estimates Among Situations

The reaction data were subjected to Pearson product-moment correlation in order to derive an intercorrelation matrix of situations across subjects (Table 3). Situations 2 and 4 revealed the highest coefficient of .75 while Situations 4 and 6, and 5 and 7 all showed the lowest coefficient of .13.

Table 1  
Situational Factors Based on the S-R Approach  
Rotated to Simple Structure

Situation	Directed Hostility	Nondirected Hostility
1. Player throws a punch at you, you retaliate and are penalized	<u>.86</u>	.15
2. Easily fake past opponent--pulled down	<u>.81</u>	.19
3. Hit hard, other's mistake	<u>.71</u>	.24
4. Start of game--knocked to ground	<u>.70</u>	.46
5. No officials--opportunity to retaliate	<u>.67</u>	.45
6. Play being hampered	<u>.70</u>	.48
7. Bench--teammate smashed to ground	<u>.64</u>	.41
8. Served on varsity--report to J.V.	<u>.63</u>	.23
9. Letterman--challenged by freshman	<u>.61</u>	.32
10. Opposing team arrives late	<u>.60</u>	.38
11. Unfair decision by official	<u>.58</u>	.57
12. Audience razzing	.44	<u>.68</u>
13. Ordered to hit	.31	<u>.69</u>
14. Get "psyched"	.29	<u>.81</u>
15. Ahead and attacking	.12	<u>.74</u>

Note. Highest loadings are underscored.

Table 2

## Situations Grouped According to A Priori Classification

Directed Hostility	
1. Your teammate fails on a defensive play and you are hit hard upon receiving possession.	
3. Your play is being cramped by an opponent who has been assigned specifically to keep you out of play.	
6. A player throws a punch at you and you retaliate; the official sees the action but only penalizes <u>you</u> .	
8. You easily fake past your opponent and he pulls you down from behind in a desperate attempt to stop you from scoring.	
Nondirected Hostility	
2. At the onset of the game, the coach tells you to go out there and hit anything and everything that moves.	
4. Your teammate tells you to get "psyched" and be aggressive.	
5. You are up by a few goals and are constantly on the attack to a much weaker team.	
7. Throughout the game a number of spectators have constantly been making fun of you.	



The high coefficient between Situations 2 and 4 (.75) suggests that these two situations are not as discrete in meaning as anticipated.

The mean similarity estimates shown in Table 3 were derived by subjecting the perception data to a multidimensional scaling technique (Magnússon, 1971). After transformation of the subjects' original perceptions to a scale ranging from 0 to 1 and treated as correlation coefficients, the data were subjected to Pearson product-moment correlation. The resulting coefficients are presented in Table 3. The coefficient of similarity between Situations 2 and 3 (.84) was the highest. Situations 5 and 6 revealed moderate similarity with a coefficient of .68. The lowest coefficient was .19 between Situations 3 and 7, and 4 and 8. Upon review of the mean similarity estimates in Table 3, it would appear the magnitude of the presented correlations indicate a moderate degree of commonality among situations. This moderate commonality among situations may be due to the small number of situations utilized in this investigation.

#### Magnitude of Hostility Responses

The magnitude of the athletes' hostility responses for all eight sport situations is revealed in Table 4. Situations 3 (play being hampered) and 6 (player throws a punch at you, you retaliate) elicited the highest responses; Situations 4 (get psyched) and 5 (ahead and attacking) elicited the lowest hostility responses. Across all situations the mean hostility response for all athletes was 2.75, a score that could be classified as slightly hostile on a 5-point scale.

#### Reaction and Perception Matrices Match

The reaction correlation matrix and the mean similarity estimates shown in Table 3 were subjected to principal components analysis with orthogonal

Table 3  
Mean Similarity Estimates and Reaction Correlation  
Coefficients Among Situations

Situation	1	2	3	4	5	6	7	8
1		20	26	23	54	56	33	40
2	30		84	40	41	33	25	31
3	63	30		34	45	47	19	32
4	23	75	28		25	28	40	19
5	39	51	28	50		68	51	59
6	55	31	59	13	27		58	59
7	37	32	51	26	13	55		36
8	58	47	69	32	42	69	54	

Note. Decimal points omitted. Mean similarity estimates are above the diagonal and reaction correlation coefficients are below the diagonal.

Table 4  
Means and Standard Deviations of Eight Hostility Situations

Situation	<u>M</u>	<u>SD</u>
1	2.56	.73
2	2.54	.56
3	3.03	.71
4	2.48	.66
5	2.06	.86
6	3.63	.77
7	2.78	.80
8	2.92	.72

rotation to simple structure using the varimax procedure. The results of the eigenvalue criterion ( $> 1$ ) yielded two factors which accounted for 69% of the total variance in the reaction data and 65% in the perception data. The results of this procedure are shown in Table 5.

Upon reviewing the reaction matrix, only Situation 7 failed to load according to the expectations of the a priori grouping (see Table 2). However, in the perception matrix, Situations 3, 5, and 7 failed to load according to the a priori grouping.

### Analysis of the Rotation of Hostility Reaction

#### Matrix to the Hostility Perception Matrix

This analysis involved the rotation of a data matrix orthogonally to a specified target matrix. The procedure utilized in this investigation was developed by Cliff (1966). The congruence between athletes' perceptions (target matrix) and reactions (data matrix) was revealed by Case II of Cliff's (1966) factor match procedure. As was discussed earlier, the reaction data were regarded as the dependent variable. Therefore, it was appropriate to rotate the reaction data to the perception data.

The factor match congruent analysis plots the reaction and perception coordinates for each situation on each hostility factor. The analysis also calculates both an overall goodness of fit and a separate factor goodness of fit. The results of the factor matrix rotation are presented in Figure 1.

The overall goodness of fit between the two matrices was .46, with -1.0 being the worst and 1.0 the best fit. The factor match revealed a coefficient of .45 on Factor 1 (Directed Hostility) and .22 on Factor 2 (Nondirected Hostility). The distance between the arrows in Figure 1 illustrates the degree of goodness of fit between situations in each matrix. Hypothesis 1,

Table 5  
Perception and Reaction Factor Matrices

Perception Factor Matrix			Reaction Factor Matrix	
Directed Hostility	Nondirected Hostility	Situation	Directed Hostility	Nondirected Hostility
<u>.73</u>	.08	1	<u>.74</u>	.21
.14	<u>.94</u>	2	.23	<u>.87</u>
.20	<u>.90</u>	3	<u>.83</u>	.17
.24	<u>.54</u>	4	.08	<u>.90</u>
<u>.79</u>	.31	5	.23	<u>.72</u>
<u>.84</u>	.27	6	<u>.85</u>	.08
<u>.69</u>	.15	7	<u>.71</u>	.13
<u>.72</u>	.19	8	<u>.81</u>	.33

Note. Highest loadings for each situation are underscored.

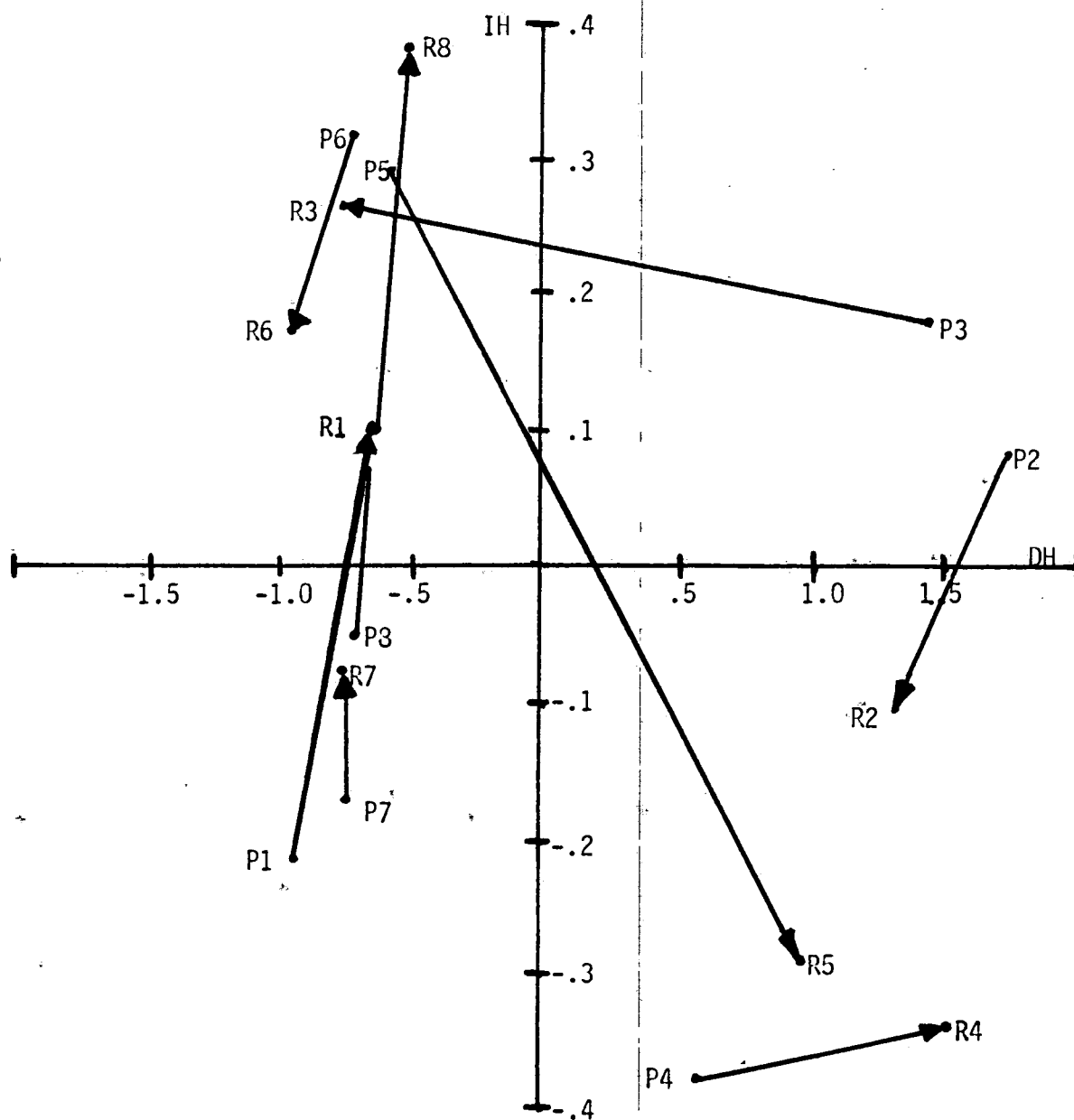


Figure 1. Rotation of hostility reaction matrix to hostility perception matrix.

that there will be a definite positive relationship between situation perception data and situation reaction data, was at this point rejected.

#### Perception-reaction Congruence of Single Situations

One index for the agreement of each situation's position in the perception and reaction space is presented in Table 6. For perceptions of and reactions to all situations, the product-moment correlation coefficients were moderate to low.

Situation 6 (punch--retaliation) revealed the highest congruence with a correlation of .54. However, Situation 2 (coach--be aggressive) resulted in a very low correlation (-.04). Because the highest correlation of congruence was only .54, Hypothesis 2, that there will be a positive relationship between single situations of situation perception data and situation reaction data, was at this time rejected.

#### Summary

As a result of data analysis, the hypothesis that there will be a definite positive relationship between situation perception data and situation reaction data was rejected.

Table 6  
Perception-reaction Congruence of Single Situations

Situation	Similarity matrix
	vs. Correlation matrix
1	.39
2	-.04
3	-.50
4	.24
5	-.48
6	.54
7	-.13
8	.37



## Chapter 5

### DISCUSSION OF RESULTS

The emphasis of this chapter focuses upon a discussion of the findings in chapter 4. The specific areas for discussion are as follows: (a) magnitude of hostility responses, (b) perception-reaction hostility factors, (c) overall perception-reaction congruence, (d) perception-reaction congruence of single situations, and (e) summary.

#### Magnitude of Hostility Responses

The primary intention of this study was to investigate the relationship between perceptions of and reactions to hostile-evoking sport situations in an attempt to explain how athletes display certain behaviors in specific situations. To be able to interpret and discuss the perceptions and reactions that were presented in chapter 4, an understanding of the magnitude of the athletes' responses must be described.

The magnitude of the athletes' hostility responses for the entire 8 situations is presented in Table 4. Situations 3 (play being hampered) and 6 (player punches you, you retaliate) elicited the highest responses, 3.63 and 3.03 respectively. Both situations presented to the athletes some form of aggressive physical contact which the athletes reacted to in a moderately hostile manner. An interpretation of the similar responses is that the athletes were receiving specific hostile cues which evoked specific hostile responses across all subjects. Fisher (1977) and Magnusson and Endler (1977) spoke of easily identifiable cues which elicited subsequent reactions in the area of ego threat. Due to specific cues perceived in the ego threatening situation certain individuals will behave with certain specific responses. This concept can be related to the interpretation of the high responses of

Situations 3 and 6. The cue values of these situations elicited the same specific reactions of the athletes.

#### Perception-reaction Hostility Factors

After subjecting the reaction correlation matrix (from the S-R inventory) and mean similarity estimates (Table 4) to principal component analyses, two factors were derived for each of the perception and reaction data (Table 5).

Upon reviewing the data presented in Table 5, it is obvious that Situations 3, 5, and 7 illustrate some degree or degrees of inconsistency. It was hypothesized that the athletes' reactions would show a reasonable degree of congruence with their perceptions. Situation 3 (play being hampered) was loaded on Factor 2 (Nondirected Hostility) in the perception matrix, but was loaded on Factor 1 (Directed Hostility) in the reaction matrix. Possibly, Situation 3 has been perceived by the athletes as being "part of the game" when competing against another opponent. However, when reacted to by the athletes, the athletes may experience frustration or a sense of personal threat upon the performance due to the aggressive behavior of the opponent. Therefore, the athletes' perceptions may be controlled due to the knowledge of the game or the knowledge of the performance that is needed to succeed in that contest. This knowledge or learning has been accumulated and stored in the athletes' memories from past experiences of failures and successes. Powers (1973) referred to perception and behavior by utilizing past experiences as reference conditions to be searched in order for a person to create a response that is best fitting to the situations. Possibly, the athletes are utilizing Powers' explanation of perception. Even though the athletes have perceived Situation 3 as being nondirected or "part of the game," the athletes reacted to Situation 3 as being an influence on

the overall success in that situation due to their reference condition. Thus, behaviors such as frustration and extreme hostility toward the opponent are understandable. The athletes are striving to succeed and are personally threatened by the opponent. Therefore, even though it is understood that Situation 3 is "part of the game," this does not negate some subsequent hostile reaction when the athlete is threatened.

An inconsistency of perception and reaction was also evident with Situation 5 (ahead and attacking). The athletes have perceived Situation 5 as being a direct hostile-evoking situation. However, their reactions loaded on Factor 2 (Nondirected Hostility). A consideration to take into account regarding the perceptions of Situation 5 might be "coach conditioning" or "sport conditioning." Generally, coaches teach athletes to strive constantly for excellence and to try to establish a dominance over the opponent. A technique used in athletics to establish a dominance or intimidation is to constantly be on the attack regardless of the opponent's ability. Most athletes would regard this behavior as being overtly aggressive and hostile. However, sport and coaches have taught athletes intimidation, dominance, and to always strive for excellence. Therefore, the loading of Situation 5 on Factor 1 (Directed Hostility) is illustrating the athletes' cognitions or thoughts regarding Situation 5. The athletes, regardless of "conditioning," have perceived Situation 5 as being personally or directly hostile, thus the high loading on Factor 1. The reversal of Situation 5 to load on the reaction Factor 2 (Nondirected Hostility) appears to represent a clear example of coach and sport conditioning. Regardless of the athletes' perceptions or cognitions of Situation 5, sport and coach conditioning have molded the athletes into reacting in a sport acceptable fashion--to continuously attack and dominate

an opponent.

It was explained earlier that perception is a cognitive process of assimilating cues from the environment, processing these cues in the brain based on past experiences, and then using the derived perception to influence behavior (Mischel, 1973). Sport situation perception does involve a cognitive process of assimilating cues from the environment which are specific enough to elicit similar perceptions. However, the processing of these cues by the athletes based on past experiences may be controlled by coach and sport conditioning, thus influencing behaviors that are conducive to sport success. This explanation provides an understanding for the inconsistency of Situation 5 from perception to reaction.

Situation 7 (audience razzing) presented some interesting results for interpretation. Situation 7 loaded on Factor 1 (Directed Hostility) contrary to the a priori classification. The athletes in this investigation categorized Situation 7 as being a direct hostile-evoking situation. A number of considerations can be applied to these results. Situation 7 directly singles out the athlete by the spectator and displays the participant for social evaluation. Apparently, this social evaluation is uncomfortable for the athletes and creates certain levels of hostility. The athletes perceived this situation as being personally threatening and, therefore, react as if the razzing is intended to persecute the personality. In the athlete's mind the spectators are attacking the ego thus trying to inhibit performance. Another interpretation of the results of Situation 7 might be in the area of ego threat. Magnusson and Ekehammar (1975) found that the situation perception factor of ego threat could be relabelled "demands of achievement." To some individuals demands of achievement might be challenging, but to

others anxiety provoking. According to Magnusson and Ekehammar, the first type of individual would seek achievement demanding situations and react actively and aggressively. On the other hand, the second type of individual would react with avoidance and withdrawal. Individuals may perceive a situation similarly, however, their reaction to the same situation may differ. Analyzing Situation 7 and applying Magnusson's and Ekehammar's explanation, it is clear that the athletes in this investigation reacted very similarly in their perceptions and reactions to the personally threatening situations. However, the degree of similarity is difficult to interpret generally across subjects.

#### Overall Perception-reaction Congruence

Expectations were that the sport situations would be distributed on factors the same for perception and reaction data. Generally, this premise was not supported by the overall coefficients of congruence (.46). The Nondirected Hostility and Directed Hostility factors revealed correlations of .22 and .45, respectively, between the perception and reaction matrices. These correlations provided little support for the interactional paradigm that the athletes' perceptions have direct influences on their responses.

Again the questions of "coach conditioning" and "sport conditioning" must be addressed regarding hostility. Possibly, a better term for conditioning might be constraint. We know that one of the postulates of the interactional paradigm emphasizes that the meaning of the situation for the individual is the most important determining factor (Endler & Magnusson, 1976). Due to the reported results of only fair congruence and regardless of the psychological meaning of each situation to the athletes, some outside intervening variable caused the athletes to react inconsistently with their

perceptions. Possibly, this variable is coaches' constraint or sport constraint influencing the athletes throughout their athletic lives. Another consideration to be recognized is the challenge that these coefficients present to the interactional paradigm of psychological meaning being a direct determinant of behavior.

Another interpretation of the inconsistency of the perception-reaction congruence is the spatial representation (Fig. 1) of the eight situations on the factors of Directed Hostility and Nondirected Hostility. It can be observed that certain situations show some degree of congruence. Situations 2, 4, 6, and 7 illustrate some degree of congruence. However, their congruence was not great enough to influence the overall coefficient. It is unclear why these situations have such low coefficients of congruence as single situations in the perception-reaction comparison (Table 6).

#### Perception-reaction Congruence of Single Situations

The second major hypothesis of this investigation was that there would be a positive relationship between single situations of perception data and reaction data. Upon reviewing Table 6 the results do not endorse this hypothesis.

Product-moment correlation coefficients are presented in chapter 4 (Table 6) for each situation, perception versus reaction. A great diversity of coefficients is evident in Table 6. Situation 6 showed the greatest degree of congruence among the eight situations with a coefficient of .54. A coefficient of .54 is not entirely convincing but can be accepted as moderate congruence. This moderate coefficient being the highest coefficient is an indication of the incompatibilities of the athletes' reactions with their perceptions. Situation 6 is obviously a personally threatening

experience and the athletes perceived this. However, Situation 6 does not only create one level of hostility (physically threatened) but heightens the hostility level by adding an element of frustration (official only penalizes you). It would appear that the athletes have recognized similar cues in Situation 6 such as frustration and being physically threatened and have demonstrated similar reactions, thus the coefficient of .54 is understandable.

Some interesting coefficients of congruence are evident with Situations 3 (play being hampered) and 5 (ahead and attacking). Both situations illustrate negative coefficients with Situation 3 being  $-.50$  and Situation 5 being  $-.48$ . What are these negative coefficients indicating? Situations 3 and 5 have degrees of oppositional or reciprocal perceptions and reactions. In other words, the athletes have perceived Situation 3 as being directly hostile-evoking. However, these same individuals reacted in a low key or nonhostile behavior while other athletes may have perceived Situation 3 very low in hostility evoking and very hostile evoking in reaction behavior. Judging from the resulting coefficient in Situation 5, the athletes' perceptions and reactions were made using the same oppositional evaluations utilized with Situation 3. These reciprocal perceptions and reactions may be due to various controls, or learned behaviors the athletes have experienced in the past. Crow and Hammond (1957) stated that perception of situations and reactions to these same situations depend upon the amount of knowledge the person "brings to the situation." When considering Crow and Hammond's assertion, a question needs to be addressed regarding knowledge. Would knowledge that is brought to the situation include variables such as "coach control" and "sport control" that the athletes have experienced in the past?

Possibly, an explanation of the reciprocal coefficients has to do with the knowledge each athlete has brought to Situations 3 and 5. Some athletes have gained knowledge as to what behavior is desired in specific situations regardless of their perceptions due to past experiences with "coach control." On the other hand, some athletes have not been exposed to a rigid coach controlled environment and, therefore, do not possess the knowledge of appropriate behaviors for certain sport situations. Therefore, with the previous concept in mind, the knowledge of past experiences in relation to coach and sport control can influence behavior regardless of the athletes' perceptions. Thus, the reciprocal coefficients of athletes perceiving and reacting directly opposite to other athletes' perceptions and reactions are conceivable.

The two lowest coefficients of congruence were revealed in Situations 2 (ordered to hit) and 7 (audience razzing). Situation 7 yielded a coefficient of  $-.13$  with Situation 2 yielding a coefficient of  $-.04$ . According to the a priori classification, Situations 2 and 7 were considered to be related to Factor 2 (Nondirected Hostility). Situation 2 did load on Factor 2 (Table 5). However, Situation 7 loaded on Factor 1 (Directed Hostility) in both perception and reaction. Situation 2 presents an interesting perceptual evaluation by the athletes. What meaning or cue does the athlete utilize in deciding how to behave to a direction such as "hit everything that moves?" Some athletes may have perceived this situation as meaning to be extremely aggressive all over the field, attacking anything regardless of the rules. Therefore, these athletes reacted in a tremendously hostile manner, thus, literally carrying out the wishes of the coach. On the other hand, some of the athletes may have categorized the coach's statement with past experiences and then reacted within their own behavioral guidelines, which are acceptable



in that sport. In other words, the athletes rated and compared the coach's statement to past experiences and then based their behavior according to the sport guidelines. These behavioral guidelines may be extremely hostile behaviors, but due to past experience the athletes attenuated or reduced in hostility the degrees of their responses. The hostile behaviors would have to be attenuated in order for the athlete to perform within the rules of the game. Upon consideration of these two interpretations of Situation 2, the low coefficient of  $-.04$  is understandable.

Situation 7 (audience razzing) also illustrated a low coefficient of congruence ( $r = -.13$ ). In order to understand the weak congruence of Situation 7 an understanding of how athletes perform while being socially evaluated is needed. Some athletes perceive a situation like Situation 7 as being ego threatening. The spectators are threatening the athletes' ego which may be personally demeaning to some. This perception of audience razzing may very well create high levels of hostility within the athletes forcing them to try to out perform the opponent in order to sustain their self-esteem or self-image. Many times these high level hostile performances are detrimental to athletes whereas, conversely, the performances may be enhanced due to the increased hostility levels.

Another consideration regarding Situation 7 is the athletes' nonrecognition of audience razzing. Some athletes may completely block out the audience during their performances. Therefore, this group of performers would not illustrate effects of ego threat, or personal threat in their efforts. A final consideration regarding interpretation of Situation 7 involves the athletes who perceived the situation as being very directly hostility evoking, but perceived the audience as being ignorant, insensitive

viewers who are trying to deter successful performance. In this case, the athletes react in a very low key, passive behavior. Thus, they do not demonstrate to the audience that their razzing is effecting performance because the audience does not represent a threat. In turn, the athletes react with very low hostile behavior.

There seems to be a number of interpretations of how athletes might perceive Situation 7. It is clear that many interpretations and reactions were utilized by the athletes due to the low correlation of  $-.13$ .

### Summary

One of the main purposes of this study was to investigate the relationship between perceptions of and reactions to hostile-evoking sport situations in an attempt to give insight into how athletes display certain behaviors in specific situations. The perception-reaction match, or congruence between sport situation perception and sport situation reaction, was  $.46$ .

Another intention of this study was to investigate the relationship between single situations of perception data and reaction data. Through the procedure of principal components analysis with orthogonal rotation to simple structure, Cliff's (1966) orthogonal rotation of a data matrix to a specified target matrix, and finally a product-moment correlation procedure, it was shown that the athletes' reactions to hostile sport situations were not entirely based upon the athletes' perceptions of the same situations. It was evident that some outside intervening variables such as "sport conditioning" or "coach conditioning" had some influence on the athletes' reactions to the hostile situations regardless of their perceptions.

## Chapter 6

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

This thesis investigated the relationship between situation perception data and situation reaction data of hostility in football and lacrosse. The study explored athletes' perceptions of and reactions to hostility-eliciting sport situations in an attempt to gain knowledge into why athletes behave as they do in specific situations. Two paper-and-pencil inventories, designed to ascertain hostility-evoking aspects of the athletes' cognitive repertoires that influence perception of situations, were utilized to facilitate this investigation.

Subjects ( $N = 50$ ) were selected from two intercollegiate varsity and junior varsity football and lacrosse teams attending Ithaca College during the spring semester of 1978. Each athlete was administered two inventories: inventory of attitudes towards sport situations and similarity of sport situations. Both inventories utilized eight identical hostility-evoking situations. The eight hostile situations were based on the construction of the S-R inventory by Burton (1977). Burton's 15 situations were subjected to a principal components analysis yielding 2 factors. Those situations illustrating the highest factor loadings in each factor were chosen. Eight situations were selected from Burton's 15. These situations were then categorized into two factors, Directed and Nondirected Hostility.

Upon analysis of the reaction data, a matrix of grand means was formulated having one collapsed mean for each subject across all responses for each individual. The mean scores were then submitted to principal components

analysis (BMD 72X). The analysis included the creation of a correlation matrix and orthogonal rotation of the created factor matrix to simple structure according to the varimax solution.

The perception data or similarity ratings were transformed into a scale ranging from 0 (no similarity at all) to 1 (identical) by dividing by four (Magnusson, 1971). Estimates of mean scores of similarity of situations by subjects were formulated from the transmuted scale and a similarity matrix was created. The similarity matrix was treated as a correlation matrix and then subjected to the same principal components analysis utilized in the reaction approach. Both the reaction correlation matrix and the mean similarity estimates were subjected to principal components analyses which yielded two factors for each of the perception and reaction data. Upon review of the results of this analysis, some obvious degrees of inconsistency were evident contrary to the a priori classification of the eight situations as being either directed or nondirected hostile situations. These inconsistencies were due to knowledge of the game and knowledge of the performance needed for success that the athletes cognized when perceiving and reacting to the eight situations.

The next analytic procedure utilized in this investigation was the rotation of the hostility reaction matrix to the hostility perception matrix. The procedure used was developed by Cliff (1966). This analysis produced some interesting inconsistencies of perception-reaction congruence. In addition to knowledge of past experiences, another consideration regarding these inconsistencies was "sport conditioning" or "coach conditioning." The athletes perceived the situations according to their past experiences and knowledge of the situations, however, there seemed to be some outside intervening variables

influencing the athletes' reactions to the situations. These intervening variables may have been "sport conditioning" or "coach conditioning." Due to the influence that this conditioning had on the athletes' reactions, the overall perception-reaction congruence coefficient of .46 is understandable. With the concept of "sport conditioning" or "coach conditioning" in mind, the inconsistencies within the perception-reaction congruence of single situations analysis are comprehensible. The highest coefficient of perception-reaction congruence of single situations was .54. This coefficient was considered to be accepted as moderate congruence.

### Conclusions

After completing the research the investigator feels justified in making the following conclusions:

1. Hostile sport situations perceived as similar are not responded to in a similar way.
2. Hostility reactions of some situations are more congruent with perception than others.
3. There are "sport constraints" or "coach constraints" that will affect perceptions and reactions.

### Recommendations for Further Study

After the completion of the study the researcher suggests the following recommendations for further study:

1. A replication of the study utilizing the INDSCAL analytic procedure.
2. Further studies in other sport areas using appropriate situational scales.
3. Further studies investigating the behaviors elicited by various hostile sport situations.

4. Further studies investigating the reliability and validity of the measurement tools.

5. Further studies investigating the influences that "sport conditioning" or "coach conditioning" have on perceptions of and reactions to athletic situations.

## APPENDIX A

### LIST OF SITUATIONS REPRESENTED IN THE S-R

#### INVENTORY OF HOSTILITY

1. Your team-mate fails on a defensive play and you are hit hard upon receiving possession.
2. At the onset of the game, the coach tells you to go out there and hit anything and everything that moves.
3. You are on the bench and a team member is brought crashing to the surface from behind.
4. Your team-mate tells you to get "psyched" and be aggressive.
5. An official makes what you consider to be an unfair decision.
6. You are up by a few goals and are constantly on the attack to a much weaker team.
7. A player throws a punch at you and you retaliate; the official sees the action but only penalizes you.
8. Your play is being cramped by an opponent who has been assigned specifically to keep you out of the play.
9. Almost immediately after the game begins you are brought crashing to the ground, fair and square.
10. You easily fake past your opponent and he pulls you down from behind in a desperate attempt to stop you from scoring.
11. The opposing team emerges from their dressing room only after the officials have given repeated warnings, while you have been out there waiting to begin the contest.
12. After serving on the varsity team for the past few weeks, you are bluntly told to report to J.V. practice from now on.

13. Throughout the game a number of spectators have been constantly making fun of you.
14. As a returning letterman you discover that your position on the team is being challenged by a freshman.
15. As there are no officials nearby you have the opportunity to retaliate against a player who has roughed you up. He is in a vulnerable position.



## APPENDIX B

### INFORMED CONSENT

Many times during athletic competition you encounter a hostile situation, give some psychological meaning to the situation, and then react to this event by exhibiting some behavior. The study you are being asked to take part in involves your perceptions and reactions to eight hostile-evoking sport situations.

The study includes two testing instruments, a similarity of sport situations questionnaire, and an inventory of attitudes towards the same situations. You will be asked to respond to each questionnaire within a 2-hour time frame. Testing procedures involve the presentation of either the similarity inventory or the attitudes questionnaire first. After completing the initial inventory you will be given a 30-minute rest period. During this time you will be free to leave the room or do whatever you please as long as you do not distract other subjects within the testing area. Immediately following the 30-minute pause you will be presented the remaining inventory.

Your responses will be made on computer cards using a number 2 pencil. You are only required to fill in your I.D. number on these cards. The number will later be used for matching your perceptions and reactions. Following are the instructions for each inventory. Review them and see if you have any further questions. If you do not have any questions and agree to be a subject in this study please sign your name on the line below.

NAME \_\_\_\_\_

## APPENDIX C

### INVENTORY OF ATTITUDES TOWARDS SPORT SITUATIONS (sample)

YOUR TEAM-MATE FAILS ON A DEFENSIVE PLAY  
AND YOU ARE HIT HARD UPON RECEIVING  
POSSESSION

Card #1

- |                                     |            |           |
|-------------------------------------|------------|-----------|
| 1. Want to hit something or someone | 1 2 3 4 5  |           |
|                                     | not at all | very much |
| <hr/>                               |            |           |
| 2. Lose patience                    | 1 2 3 4 5  |           |
|                                     | not at all | very much |
| <hr/>                               |            |           |
| 3. Swear                            | 1 2 3 4 5  |           |
|                                     | not at all | very much |
| <hr/>                               |            |           |
| 4. Grind teeth                      | 1 2 3 4 5  |           |
|                                     | not at all | very much |
| <hr/>                               |            |           |
| 5. Heart beats faster               | 1 2 3 4 5  |           |
|                                     | not at all | very much |
| <hr/>                               |            |           |
| 6. Want to yell                     | 1 2 3 4 5  |           |
|                                     | not at all | very much |
| <hr/>                               |            |           |
| 7. Frown                            | 1 2 3 4 5  |           |
|                                     | not at all | very much |
| <hr/>                               |            |           |
| 8. Feel irritated                   | 1 2 3 4 5  |           |
|                                     | not at all | very much |
| <hr/>                               |            |           |
| 9. Hands tremble                    | 1 2 3 4 5  |           |
|                                     | not at all | very much |
| <hr/>                               |            |           |
| 10. Become enraged                  | 1 2 3 4 5  |           |
|                                     | not at all | very much |
| <hr/>                               |            |           |
| 11. Become tense                    | 1 2 3 4 5  |           |
|                                     | not at all | very much |
| <hr/>                               |            |           |

## APPENDIX D

### SIMILARITY OF SPORT SITUATIONS (sample)

PLEASE RATE THE SIMILARITY OF THE FOLLOWING PAIRS OF SPORT SITUATIONS: (A = 0 similarity; E = identical similarity)

Your teammate tells you to get "psyched" and be aggressive.

1.

You easily fake past your opponent and he pulls you down from behind in a desperate attempt to stop you from scoring.

Your teammate fails on a defensive play and you are hit hard upon receiving possession.

2.

You easily fake past your opponent and he pulls you down from behind in a desperate attempt to stop you from scoring.

At the onset of the game, the coach tells you to go out there and hit anything and everything that moves.

3.

A player throws a punch at you and you retaliate; the official sees the action but only penalizes you.

At the onset of the game, the coach tells you to go out there and hit anything and everything that moves.

4.

Your teammate fails on a defensive play and you are hit hard upon receiving possession.

## APPENDIX E

### INVENTORY OF ATTITUDES TOWARDS SPORT SITUATIONS

Please do not mark this booklet in any way. The answers to the statements in this inventory are to be recorded on the special answer cards provided.

Print your name, date of birth, and your school in the blanks provided on the answer cards. Use the special pencils provided.

#### PLEASE READ VERY CAREFULLY.

This inventory is a means of studying your reactions to and attitudes to various types of situations. On the following pages are represented 8 situations with which each of you as athletes will likely be able to identify. For each of these situations, certain very common types of personal reactions and feelings are listed. Indicate the alternative on the answer cards, representing the five points on the scales shown in this booklet, the degree to which you would show these reactions and feelings in the situations indicated. Please answer all questions. Leave no blanks in questions 1-44 on each card.

#### Here is an example:

AN OPPONENT INTENTIONALLY FALLS AND A FOUL/PENALTY IS CALLED AGAINST YOU

Feel irritated                      1 2 3 4 5  
   Not at all                      Very much

If you feel very irritated in this situation, then darken 5. If you are somewhat irritated, then darken 2, 3, or 4, depending on how much irritation. If you do not feel irritated at all, then darken 1.

THERE ARE NO RIGHTS OR WRONGS. ANSWERS ARE NO REFLECTION ON YOUR CHARACTER AND WILL BE KEPT IN THE STRICTEST CONFIDENCE. IT IS HOPED, WITH YOUR HELP, THAT THIS STUDY MAY HELP TO SOLVE SOME OF THE UNANSWERED QUESTIONS IN SPORT.

## APPENDIX F

### SIMILARITY OF SPORT SITUATIONS

Please do not mark this booklet in any way. The ratings to the sport situations are to be recorded on the special answer card provided.

Print your name, date of birth, and your school in the blanks provided on the answer card. Use the special pencils provided.

#### PLEASE READ CAREFULLY..

This inventory contains 8 sport situations designed to elicit certain degrees of hostility from athletes. Your task is to rate the degree of similarity of each pair of situations. There will be 28 paired decisions for you to make. Indicate your similarity rating on the answer card. Leave no blanks in questions 1-28 on the card.

#### Here is an example:

You are on the bench and a team member is brought crashing to the surface from behind.

An official makes what you consider to be an unfair decision.

Use the following scale to describe your feelings about the similarity of each pair:

- A - not at all similar
- B - somewhat similar
- C - rather similar
- D - very similar
- E - identical

Darken A, B, C, D, or E depending of the degree of similarity.

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